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 NEWS  1           Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2           "Ask CAS" for self-help around the clock
 NEWS  3  JAN 27   Source of Registration (SR) information in REGISTRY updated
                   and searchable
 NEWS  4  JAN 27   A new search aid, the Company Name Thesaurus, available in
                   CA/CAplus
 NEWS  5  FEB 05   German (DE) application and patent publication number format
                   changes
 NEWS  6  MAR 03   MEDLINE and LMEDLINE reloaded
 NEWS  7  MAR 03   MEDLINE file segment of TOXCENTER reloaded
 NEWS  8  MAR 03   FRANCEPAT now available on STN
 NEWS  9  MAR 29   Pharmaceutical Substances (PS) now available on STN
 NEWS 10  MAR 29   WPIFV now available on STN
 NEWS 11  MAR 29   No connect hour charges in WPIFV until May 1, 2004
 NEWS 12  MAR 29   New monthly current-awareness alert (SDI) frequency in RAPRA

 NEWS EXPRESS  MARCH 31 CURRENT WINDOWS VERSION IS V7.00A, CURRENT
               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 3 MARCH 2004
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 NEWS INTER    General Internet Information
 NEWS LOGIN    Welcome Banner and News Items
 NEWS PHONE    Direct Dial and Telecommunication Network Access to STN
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FILE 'HOME' ENTERED AT 11:53:53 ON 14 APR 2004

=> file medline, biosis, wpids, uspatful, dgene
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.21       0.21

FILE 'MEDLINE' ENTERED AT 11:54:22 ON 14 APR 2004
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FILE 'BIOSIS' ENTERED AT 11:54:22 ON 14 APR 2004
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FILE 'WPIDS' ENTERED AT 11:54:22 ON 14 APR 2004
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FILE 'USPATFULL' ENTERED AT 11:54:22 ON 14 APR 2004
CA INDEXING COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'DGENE' ENTERED AT 11:54:22 ON 14 APR 2004
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=> s factor X
L1 13756 FACTOR X

=> s l1 and analog
L2 991 L1 AND ANALOG

=> s l2 and "Glu226 to Ile235"
L3 7 L2 AND "GLU226 TO ILE235"

=> d l3 ti abs ibib tot

L3 ANSWER 1 OF 7 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235**.
AN 2001-191516 [19] WPIDS
AB WO 200110896 A UPAB: 20010405
NOVELTY - A **factor X analog** (I) which contains a modification between **Glu226** and **Ile235**, relative to a 488 residue amino acid sequence, fully defined in the specification, is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(1) a recombinant DNA coding (II) for (I) contained in a vector for the recombinant expression of the coded protein;
(2) a preparation (P1) containing (I) which is purified or its precursor protein;
(3) a preparation (P2) containing an activated **factor X analog** obtainable by activation of (I), where the activated **factor X analog** has high stability and structural integrity and is free from inactive **factor X/Xa analog** intermediates and autoproteolytic **factor X** decomposition products;
(4) producing (P1), comprising:
(a) preparing recombinant DNA coding for (I) contained in a vector for the recombinant expression of the coded protein;
(b) transforming a cell;
(c) expressing (I);
(d) isolating (I); and
(e) purifying (I) using chromatography; and
(5) producing (P), comprising performing the method of (4), and subjecting the (I) produced to an activation step.
ACTIVITY - Hemostatic.
In order to confirm the functional activity of the purified rfX/fXIa(Q-R/I) molecules, the aPTT (Activated Partial Thromboplastin Time) in fVIII- and fIX-deficient plasma from human and murine origin was measured in the presence of the rfX molecules. 100 micro l of deficient plasma (immunodepleted human plasma, Baxter AG, plasma from fVIII or fIX knock-out mice) was mixed with purified fX molecule preparation and DAPPTIN (Baxter AG) and incubated. The coagulation reaction was initiated by CaCl2. The clotting time was estimated and compared to normal plasma.

The results showed that a significant reduction of the clotting time was mediated by purified rfX/fXIa(Q-R/I) in all deficient plasma tested either from human or murine origin. In contrast to the rfX-**analog**, rfX wild-type molecules did not mediate a significant reduction of the clotting time in these plasmas.

MECHANISM OF ACTION - Gene therapy.

USE - (II) and (P1) are useful to produce a drug (claimed), which is useful for treatment of patients with blood coagulation disorders, such as patients suffering from hemophilia, or hemophiliacs with inhibitory antibodies.

ADVANTAGE - (P1) and (P2) which contains a polypeptide with X/Xa activity, which, compared to prior art, is more readily activated by factor X1a or its derivative, which has high stability, without having to use one of the proteases used in prior art to activate the natural **factor X**, particularly one of animal origins, such as Russell's viper venom (RVV) or trypsin.

Dwg.0/5

ACCESSION NUMBER: 2001-191516 [19] WPIDS
DOC. NO. CPI: C2001-057402
TITLE: Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235**.
DERWENT CLASS: B04 D16
INVENTOR(S): HIMMELSPACH, M; SCHLOKAT, U
PATENT ASSIGNEE(S): (BAXT) BAXTER AG
COUNTRY COUNT: 91
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001010896	A2	20010215	(200119)*	EN	50
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW					
AU 2000062807	A	20010305	(200130)		
AT 9901377	A	20020715	(200254)		
EP 1238065	A2	20020911	(200267)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
AT 410216	B	20030115	(200308)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001010896	A2	WO 2000-EP7631	20000807
AU 2000062807	A	AU 2000-62807	20000807
AT 9901377	A	AT 1999-1377	19990810
EP 1238065	A2	EP 2000-949465	20000807
		WO 2000-EP7631	20000807
AT 410216	B	AT 1999-1377	19990810

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2000062807	A	Based on	WO 2001010896
EP 1238065	A2	Based on	WO 2001010896
AT 410216	B	Previous Publ.	AT 9901377

PRIORITY APPLN. INFO: AT 1999-1377 19990810

L3 ANSWER 2 OF 7 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235** -
AN AAB70411 Protein DGENE
AB The present invention describes a **factor X** analogue (I) which contains a modification between **Glu226** and **Ile235**, relative to the 488 residue amino acid sequence given in AAB70411. (I) has haemostatic activity and can be used in gene therapy. (I) encoding polynucleotide (II) can be used to produce a drug, which is useful for treatment of patients with blood coagulation disorders, such as patients suffering from haemophilia, or haemophiliacs with inhibitory antibodies. Preparations containing a polypeptide with **factor X**/Xa activity are more readily activated by factor X1a or its derivative, which has high stability, without having to use one of the proteases used in prior art to activate the natural **factor X**, particularly one of animal origins, such as Russell's viper venom (RVV) or trypsin. The present sequence represents human **factor X**, which is given in the exemplification of the present invention.
ACCESSION NUMBER: AAB70411 Protein DGENE
TITLE: Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235** -
INVENTOR: Himmelspach M; Schlokat U
PATENT ASSIGNEE: (BAXT)BAXTER AG.
PATENT INFO: WO 2001010896 A2 20010215 50p
APPLICATION INFO: WO 2000-EP7631 20000807
PRIORITY INFO: AT 1999-1377 19990810
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2001-191516 [19]
CROSS REFERENCES: N-PSDB: AAF59409
DESCRIPTION: Human **factor X** protein sequence SEQ ID NO:2.

L3 ANSWER 3 OF 7 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235** -
AN AAF59413 DNA DGENE
AB The present invention describes a **factor X** analogue (I) which contains a modification between **Glu226** and **Ile235**, relative to the 488 residue amino acid sequence given in AAB70411. (I) has haemostatic activity and can be used in gene therapy. (I) encoding polynucleotide (II) can be used to produce a drug, which is useful for treatment of patients with blood coagulation disorders, such as patients suffering from haemophilia, or haemophiliacs with inhibitory antibodies. Preparations containing a polypeptide with **factor X**/Xa activity are more readily activated by factor X1a or its derivative, which has high stability, without having to use one of the proteases used in prior art to activate the natural **factor X**, particularly one of animal origins, such as Russell's viper venom (RVV) or trypsin. The present sequence represents a mutagenesis oligonucleotide for human **factor X**, which is used in an example from the present invention.
ACCESSION NUMBER: AAF59413 DNA DGENE

TITLE: Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235** -
INVENTOR: Himmelspach M; Schlokat U
PATENT ASSIGNEE: (BAXT)BAXTER AG.
PATENT INFO: WO 2001010896 A2 20010215 50p
APPLICATION INFO: WO 2000-EP7631 20000807
PRIORITY INFO: AT 1999-1377 19990810
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2001-191516 [19]
DESCRIPTION: Human **factor X** mutagenic oligonucleotide SEQ ID NO:6.

L3 ANSWER 4 OF 7 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235** -
AN AAF59412 DNA DGENE
AB The present invention describes a **factor X** analogue (I) which contains a modification between **Glu226** and **Ile235**, relative to the 488 residue amino acid sequence given in AAB70411. (I) has haemostatic activity and can be used in gene therapy. (I) encoding polynucleotide (II) can be used to produce a drug, which is useful for treatment of patients with blood coagulation disorders, such as patients suffering from haemophilia, or haemophiliacs with inhibitory antibodies. Preparations containing a polypeptide with **factor X**/Xa activity are more readily activated by factor X1a or its derivative, which has high stability, without having to use one of the proteases used in prior art to activate the natural **factor X**, particularly one of animal origins, such as Russell's viper venom (RVV) or trypsin. The present sequence represents a mutagenesis oligonucleotide for human **factor X**, which is used in an example from the present invention.
ACCESSION NUMBER: AAF59412 DNA DGENE
TITLE: Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235** -
INVENTOR: Himmelspach M; Schlokat U
PATENT ASSIGNEE: (BAXT)BAXTER AG.
PATENT INFO: WO 2001010896 A2 20010215 50p
APPLICATION INFO: WO 2000-EP7631 20000807
PRIORITY INFO: AT 1999-1377 19990810
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2001-191516 [19]
DESCRIPTION: Human **factor X** mutagenic oligonucleotide SEQ ID NO:5.

L3 ANSWER 5 OF 7 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235** -
AN AAF59411 DNA DGENE
AB The present invention describes a **factor X** analogue (I) which contains a modification between **Glu226** and **Ile235**, relative to the 488 residue amino acid sequence given in AAB70411. (I) has haemostatic activity and can be used in gene therapy.

(I) encoding polynucleotide (II) can be used to produce a drug, which is useful for treatment of patients with blood coagulation disorders, such as patients suffering from haemophilia, or haemophiliacs with inhibitory antibodies. Preparations containing a polypeptide with **factor X**/Xa activity are more readily activated by factor X1a or its derivative, which has high stability, without having to use one of the proteases used in prior art to activate the natural **factor X**, particularly one of animal origins, such as Russell's viper venom (RVV) or trypsin. The present sequence represents a PCR primer for the wild type human **factor X**, which is used in an example from the present invention.

ACCESSION NUMBER: AAF59411 DNA DGENE
TITLE: Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235** -
INVENTOR: Himmelspach M; Schlokat U
PATENT ASSIGNEE: (BAXT)BAXTER AG.
PATENT INFO: WO 2001010896 A2 20010215 50p
APPLICATION INFO: WO 2000-EP7631 20000807
PRIORITY INFO: AT 1999-1377 19990810
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2001-191516 [19]
DESCRIPTION: Human **factor X** PCR primer SEQ ID NO:4.

L3 ANSWER 6 OF 7 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235** -
AN AAF59410 DNA DGENE
AB The present invention describes a **factor X** analogue (I) which contains a modification between **Glu226** and **Ile235**, relative to the 488 residue amino acid sequence given in AAB70411. (I) has haemostatic activity and can be used in gene therapy. (I) encoding polynucleotide (II) can be used to produce a drug, which is useful for treatment of patients with blood coagulation disorders, such as patients suffering from haemophilia, or haemophiliacs with inhibitory antibodies. Preparations containing a polypeptide with **factor X**/Xa activity are more readily activated by factor X1a or its derivative, which has high stability, without having to use one of the proteases used in prior art to activate the natural **factor X**, particularly one of animal origins, such as Russell's viper venom (RVV) or trypsin. The present sequence represents a PCR primer for the wild type human **factor X**, which is used in an example from the present invention.

ACCESSION NUMBER: AAF59410 DNA DGENE
TITLE: Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235** -
INVENTOR: Himmelspach M; Schlokat U
PATENT ASSIGNEE: (BAXT)BAXTER AG.
PATENT INFO: WO 2001010896 A2 20010215 50p
APPLICATION INFO: WO 2000-EP7631 20000807
PRIORITY INFO: AT 1999-1377 19990810
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2001-191516 [19]
DESCRIPTION: Human **factor X** PCR primer SEQ ID NO:3.

L3 ANSWER 7 OF 7 DGENE COPYRIGHT 2004 THOMSON DERWENT on STN
TI Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235** -
AN AAF59409 cDNA DGENE
AB The present invention describes a **factor X** analogue (I) which contains a modification between **Glu226** and **Ile235**, relative to the 488 residue amino acid sequence given in AAB70411. (I) has haemostatic activity and can be used in gene therapy. (I) encoding polynucleotide (II) can be used to produce a drug, which is useful for treatment of patients with blood coagulation disorders, such as patients suffering from haemophilia, or haemophiliacs with inhibitory antibodies. Preparations containing a polypeptide with **factor X**/Xa activity are more readily activated by factor X1a or its derivative, which has high stability, without having to use one of the proteases used in prior art to activate the natural **factor X**, particularly one of animal origins, such as Russell's viper venom (RVV) or trypsin. The present sequence encodes human **factor X**, which is given in the exemplification of the present invention.
ACCESSION NUMBER: AAF59409 cDNA DGENE
TITLE: Novel **factor X analog** useful for producing drug which is useful for treatment of blood coagulation disorders, such as hemophilia, contains modification between amino acids **Glu226** and **Ile235** -
INVENTOR: Himmelspach M; Schlokat U
PATENT ASSIGNEE: (BAXT) BAXTER AG.
PATENT INFO: WO 2001010896 A2 20010215 50p
APPLICATION INFO: WO 2000-EP7631 20000807
PRIORITY INFO: AT 1999-1377 19990810
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: 2001-191516 [19]
CROSS REFERENCES: P-PSDB: AAB70411
DESCRIPTION: Human **factor X** nucleotide sequence SEQ ID NO:1.

=> s FX alpha
L4 38 FX ALPHA

=> s factor Xa
L5 19948 FACTOR XA

=> s l4 and l5
L6 18 L4 AND L5

=> d l6 ti abs ibib tot

L6 ANSWER 1 OF 18 USPATFULL on STN
TI Factor X analogues having a modified protease cleavage site
AB Factor X analogues having a modification in the region of the natural **Factor Xa** activation cleavage site, said modification representing a processing site of a protease not naturally cleaving in this region of the Factor X sequence, preparations containing the Factor X analogues according to the invention, and processes for the preparation thereof are described.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 2003:258328 USPATFULL
TITLE: Factor X analogues having a modified protease cleavage site

INVENTOR(S):	Himmelspach, Michele, Leopoldsdorf, AUSTRIA Schlokat, Uwe, Orth/Donau, AUSTRIA Dorner, Friedrich, Vienna, AUSTRIA Fisch, Andreas, St. Gallen, SWITZERLAND Eibl, Johann, Vienna, AUSTRIA

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003181381	A1	20030925
APPLICATION INFO.:	US 2003-407123	A1	20030404 (10)

RELATED APPLN. INFO.: Division of Ser. No. US 1999-367791, filed on 12 Nov 1999, GRANTED, Pat. No. US 6573071 A 371 of International Ser. No. WO 1998-AT45, filed on 27 Feb 1998, UNKNOWN

	NUMBER	DATE
PRIORITY INFORMATION:	AT 1997-335	19970227

DOCUMENT TYPE:	Utility
FILE SEGMENT:	APPLICATION
LEGAL REPRESENTATIVE:	TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
NUMBER OF CLAIMS:	51
EXEMPLARY CLAIM:	1
NUMBER OF DRAWINGS:	13 Drawing Page(s)
LINE COUNT:	2349

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 2 OF 18 USPATFULL on STN

TI Factor X analogues with a modified protease cleavage site

AB Factor X analogues having a modification in the region of the natural **Factor Xa** activation cleavage site, said modification representing a processing site of a protease not naturally cleaving in this region of the Factor X sequence, preparations containing the Factor X analogues according to the invention, and processes for the preparation thereof are described.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER:	2003:148878 USPATFULL
TITLE:	Factor X analogues with a modified protease cleavage site
INVENTOR(S):	Himmelspach, Michele, Leopoldsdorf, AUSTRIA Schlokat, Uwe, Orth/Donau, AUSTRIA Dorner, Friedrich, Vienna, AUSTRIA Fisch, Andreas, St. Gallen, SWITZERLAND Eibl, Johann, Vienna, AUSTRIA
PATENT ASSIGNEE(S):	Baxter Aktiengesellschaft, Vienna, AUSTRIA (non-U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 6573071	B1	20030603	
	WO 9838317		19980903	
APPLICATION INFO.:	US 1999-367791		19991112	(9)
	WO 1998-AT45		19980227	

	NUMBER	DATE
PRIORITY INFORMATION:	AT 1997-335	19970227

DOCUMENT TYPE:	Utility
FILE SEGMENT:	GRANTED
PRIMARY EXAMINER:	Low, Christopher S. F.
ASSISTANT EXAMINER:	Schnizer, Holly
LEGAL REPRESENTATIVE:	Townsend and Townsend and Crew, L.L.P.

NUMBER OF CLAIMS: 64
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 13 Drawing Figure(s); 13 Drawing Page(s)
LINE COUNT: 2472
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 3 OF 18 USPATFULL on STN
TI Method of determining a functional linker for fusing globin subunts
AB A functional linker for a polypeptide in which two alpha or beta globin-like domains are genetically fused is determined by screening a library of genetically fused polypeptides, in which the linker region is varied, for the ability to participate in the formation of hemoglobin-like protein, as measured by the protein's response to carbon monoxide. In a preferred embodiment, cells expressing the protein turn red as a result of carbon monoxide pressure.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 2001:131051 USPATFULL
TITLE: Method of determining a functional linker for fusing globin subunts
INVENTOR(S): Looker, Douglas L., Lafayette, CO, United States
Stetler, Gary L., Denver, CO, United States
PATENT ASSIGNEE(S): Somatogen, Inc., Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6274331	B1	20010814
APPLICATION INFO.:	US 1995-444915		19950519 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1991-789179, filed on 8 Nov 1991, now patented, Pat. No. US 5545727 Continuation-in-part of Ser. No. US 1991-671707, filed on 1 Apr 1991, now abandoned Continuation-in-part of Ser. No. WO 1990-US2654, filed on 10 May 1990 Continuation-in-part of Ser. No. US 1989-374161, filed on 30 Jun 1989, now abandoned , said Ser. No. WO US9002654 And Ser. No. US 1989-379116, filed on 13 Jul 1989, now abandoned , said Ser. No. WO US9002654 And Ser. No. US 1989-349623, filed on 10 May 1989, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Hutzell, Paula K.
ASSISTANT EXAMINER: Bakalyar, Heather A.
LEGAL REPRESENTATIVE: Cooper, Iver P.
NUMBER OF CLAIMS: 5
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 72 Drawing Figure(s); 70 Drawing Page(s)
LINE COUNT: 6815
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 4 OF 18 USPATFULL on STN
TI Production and use of multimeric hemoglobins
AB DNA molecules which encode pseudodimeric globin-like polypeptides with an asymmetric cysteine mutation suitable for crosslinking two tetramers, or which encode pseudooligomeric globin-like polypeptides comprising four or more globin-like domains, are useful in the preparation of multimeric hemoglobin-like proteins.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 2001:18602 USPATFULL
TITLE: Production and use of multimeric hemoglobins
INVENTOR(S): Anderson, David C., San Bruno, CA, United States
Mathews, Antony J., Boulder, CO, United States

	Stetler, Gary L., Boulder, CO, United States
PATENT ASSIGNEE(S):	Baxter Biotech Technology Sarl, Neuchatel, Switzerland (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6184356	B1	20010206
APPLICATION INFO.:	US 1998-58562		19980413 (9)

RELATED APPLN. INFO.: Division of Ser. No. US 1995-443890, filed on 31 May 1995, now patented, Pat. No. US 5739011 Continuation of Ser. No. US 1994-240712, filed on 9 May 1994, now patented, Pat. No. US 5599907 Continuation-in-part of Ser. No. US 1991-789179, filed on 8 Nov 1991, now patented, Pat. No. US 5545727 Continuation-in-part of Ser. No. US 1991-671707, filed on 1 Apr 1991, now abandoned Division of Ser. No. WO 1990-US2654, filed on 10 May 1990 Continuation-in-part of Ser. No. US 1989-374161, filed on 30 Jun 1989, now abandoned Continuation-in-part of Ser. No. US 1989-379116, filed on 13 Jul 1989, now abandoned Continuation-in-part of Ser. No. US 1989-349623, filed on 10 May 1989, now abandoned

DOCUMENT TYPE:	Utility
FILE SEGMENT:	Granted
PRIMARY EXAMINER:	Guzo, David
ASSISTANT EXAMINER:	Shuman, Jon
LEGAL REPRESENTATIVE:	Senniger, Powers, Leavitt & Roedel
NUMBER OF CLAIMS:	7
EXEMPLARY CLAIM:	1
NUMBER OF DRAWINGS:	14 Drawing Figure(s); 12 Drawing Page(s)
LINE COUNT:	3686

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 5 OF 18 USPATFULL on STN

TI Hemoglobins with intersubunit dislufide bonds

AB Cysteine substitution mutants of alpha and/or beta globin mutants are produced by recombinant DNA techniques and used in the construction, intracellularly or otherwise, of mutant hemoglobins in which alpha- and beta-globin like subunits are crosslinked by disulfide bonds. Solutions of these mutant hemoglobins are used as blood substitutes.

Preferably, these mutant hemoglobins contain further mutations which reduce their affinity for oxygen.

Hemoglobins are preferably obtained by recombinant DNA techniques. Both alpha and beta globin chains can now be readily expressed, making possible the commercial production of wholly artificial hemoglobin, whether conventional or mutant in form. Solutions of wholly artificial hemoglobins are also used as blood substitutes. Expression of the alpha glolbin gene was substantially improved by means of a beta globin gene "header".

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER:	2000:128148 USPATFULL
TITLE:	Hemoglobins with intersubunit dislufide bonds
INVENTOR(S):	Hoffman, Stephen J., Denver, CO, United States
	Nagai, Kiyoshi, Cambridge, United Kingdom
PATENT ASSIGNEE(S):	Baxter Biotech Technology Sarl, Neuchatel, Switzerland (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6124114		20000926
APPLICATION INFO.:	US 1995-450900		19950526 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1993-158483, filed on 29 Nov 1993, now patented, Pat. No. US 5449759 which is a continuation of Ser. No. US 1989-443950, filed on 1 Dec 1989, now abandoned which is a continuation-in-part of Ser. No. US 1988-194338, filed on 10 May 1988, now patented, Pat. No. US 5028588, issued on 10 Jul 1991

	NUMBER	DATE
PRIORITY INFORMATION:	GB 1987-11614	19870516

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Carlson, Karen Cochrane
LEGAL REPRESENTATIVE: Senniger, Powers, Leavitt & Roedel
NUMBER OF CLAIMS: 22
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Figure(s); 5 Drawing Page(s)
LINE COUNT: 1822
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 6 OF 18 USPATFULL on STN
TI Genetically fused globin-like polypeptides having hemoglobin-like activity
AB The alpha subunits of hemoglobin, which in nature are formed as separate polypeptide chains which bind noncovalently to the beta subunits, are here provided in the form of the novel molecule di-alpha globin, a single polypeptide chain defined by connecting the two alpha subunits either directly via peptide bond or indirectly by a flexible amino acid or peptide linker. Di-alpha globin may be combined in vivo or in vitro with beta globin and heme to form hemoglobin. Di-alpha globin is expressed by recombinant DNA techniques. Di-beta globin may be similarly obtained.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 1998:151087 USPATFULL
TITLE: Genetically fused globin-like polypeptides having hemoglobin-like activity
INVENTOR(S): Hoffman, Stephen J., Denver, CO, United States
Looker, Douglas L., Lafayette, CO, United States
Rosendahl, Mary S., Broomfield, CO, United States
Stetler, Gary L., Denver, CO, United States
Wagenbach, Michael, Osaka, Japan
Anderson, David C., Lafayette, CO, United States
Mathews, Antony James, Louisville, CO, United States
Nagai, Kiyoshi, Cambridge, England
PATENT ASSIGNEE(S): Somatogen, Inc., Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5844089		19981201
APPLICATION INFO.:	US 1995-450733		19950525 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1991-789179, filed on 8 Nov 1991, now patented, Pat. No. US 5545727 which is a continuation-in-part of Ser. No. US 1991-671707, filed on 1 Apr 1991, now abandoned which is a continuation-in-part of Ser. No. US 1989-374161, filed on 30 Jun 1989, now abandoned Ser. No. Ser. No. US 1989-379116, filed on 3 Jul 1989, now abandoned And Ser. No. US 1989-349623, filed on 10 May 1989, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Carlson, Karen C.

LEGAL REPRESENTATIVE: Cooper, Iver P.
NUMBER OF CLAIMS: 23
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 72 Drawing Figure(s); 70 Drawing Page(s)
LINE COUNT: 6776
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 7 OF 18 USPATFULL on STN
TI Hemoglobin-like protein comprising genetically fused globin-like polypeptides
AB The alpha subunits of hemoglobin, which in nature are formed as separate polypeptide chains which bind noncovalently to the beta subunits, are here provided in the form of the novel molecule di-alpha globin, a single polypeptide chain defined by connecting the two alpha subunits either directly via peptide bond or indirectly by a flexible amino acid or peptide linker. Di-alpha globin may be combined in vivo or in vitro with beta globin and heme to form hemoglobin. Di-alpha globin is expressed by recombinant DNA techniques. Di-beta globin may be similarly obtained.

We further describe the production of tetrameric human hemoglobin and di-alpha/beta.sub.2 hemoglobin in the yeast Saccharomyces cerevisiae. The synthesis of the protein is directed by a synthetic promotor consisting of two functional parts, an upstream activator sequence (UAS) that confers inducible transcription by galactose from a consensus yeast transcriptional initiation site. The expression construct is designed such that translation is expected to initiate at the same position as the human wild-type genes for α- and β-globin. Three different types of expression vectors have been used: (1) α-globin and β-globin contained on two separate plasmids (pGS4688 and pGS4988) in a diploid yeast strain; (2) α-globin and β-globin each contained on a single plasmid (pGS289 and pGS389) and expressed in either haploid or diploid strains; and (3) di-alpha-globin and beta globin contained on a single plasmid (pGS 3089)and expressed in haploid strains.

Finally, we describe the co-expression of alpha and beta globin chains. The chains are folded together and combined intracellularly with heme to form active tetrameric hemoglobin. The hemoglobin may be recovered from the cells' soluble fraction. The invention thus obviates the need to express alpha and beta globin separately, solubilize, renature and purify them, and combine them in vitro with heme to obtain an artificial hemoglobin. By way of comparison, the separately expressed beta globin known in the art is deposited in inclusion bodies. Polycistronic co-expression of alpha and beta globins is particularly preferred.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 1998:151086 USPATFULL
TITLE: Hemoglobin-like protein comprising genetically fused globin-like polypeptides
INVENTOR(S): Hoffman, Stephen J., Denver, CO, United States
Looker, Douglas L., Lafayette, CO, United States
Rosendahl, Mary S., Broomfield, CO, United States
Stetler, Gary L., Denver, CO, United States
Wagenbach, Michael, Osaka, Japan
Anderson, David C., Lafayette, CO, United States
Mathews, Antony James, Louisville, CO, United States
Nagai, Kiyoshi, Cambridge, England
PATENT ASSIGNEE(S): Somatogen, Inc., Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5844088		19981201

APPLICATION INFO.: US 1995-444991 19950519 (8)
RELATED APPLN. INFO.: Division of Ser. No. US 1991-789179, filed on 8 Nov 1991, now patented, Pat. No. US 5545727 which is a continuation-in-part of Ser. No. US 1991-671707, filed on 1 Apr 1991, now abandoned which is a continuation-in-part of Ser. No. US 1989-374161, filed on 30 Jun 1989, now abandoned Ser. No. Ser. No. US 1989-379116, filed on 13 Jul 1989, now abandoned And Ser. No. US 1989-349623, filed on 10 May 1989, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Carlson, Karen C.
LEGAL REPRESENTATIVE: Cooper, Iver P.
NUMBER OF CLAIMS: 50
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 71 Drawing Figure(s); 69 Drawing Page(s)
LINE COUNT: 6872
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 8 OF 18 USPATFULL on STN
TI DNA encoding fused alpha-beta globin pseuodimer and production of pseudotetrameric hemoglobin
AB The alpha subunits of hemoglobin, which in nature are formed as separate polypeptide chains which bind noncovalently to the beta subunits, are here provided in the form of the novel molecule di-alpha globin, a single polypeptide chain defined by connecting the two alpha subunits either directly via peptide bond or indirectly by a flexible amino acid or peptide linker. Di-alpha globin may be combined in vivo or in vitro with beta globin and heme to form hemoglobin. Di-alpha globin is expressed by recombinant DNA techniques. Di-beta globin may be similarly obtained.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 1998:104592 USPATFULL
TITLE: DNA encoding fused alpha-beta globin pseuodimer and production of pseudotetrameric hemoglobin
INVENTOR(S): Anderson, David C., Lafayette, CO, United States
Mathews, Antony James, Louisville, CO, United States
PATENT ASSIGNEE(S): Somatogen, Inc., Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5801019		19980901
APPLICATION INFO.:	US 1995-444939		19950519 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1991-789179, filed on 8 Nov 1991, now patented, Pat. No. US 5545727 which is a continuation-in-part of Ser. No. US 1991-671707, filed on 1 Apr 1991, now abandoned which is a continuation-in-part of Ser. No. US 1989-374161, filed on 30 Jun 1989, now abandoned And Ser. No. US 1989-379116, filed on 13 Jul 1989, now abandoned And Ser. No. US 1989-349623, filed on 10 May 1989, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Carlson, Karen C.
LEGAL REPRESENTATIVE: Cooper, Iver P.
NUMBER OF CLAIMS: 15
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 72 Drawing Figure(s); 70 Drawing Page(s)
LINE COUNT: 6736
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 9 OF 18 USPATFULL on STN

TI Co-expression of alpha and beta globins

AB The alpha subunits of hemoglobin, which in nature are formed as separate polypeptide chains which bind noncovalently to the beta subunits, are here provided in the form of the novel molecule di-alpha globin, a single polypeptide chain defined by connecting the two alpha subunits either directly via peptide bond or indirectly by a flexible amino acid or peptide linker. Di-alpha globin may be combined in vivo or in vitro with beta globin and heme to form hemoglobin. Di-alpha globin is expressed by recombinant DNA techniques. Di-beta globin may be similarly obtained.

We further describe the production of tetrameric human hemoglobin and di-alpha/beta.sub.2 hemoglobin in the yeast Saccharomyces cerevisiae. The synthesis of the protein is directed by a synthetic promotor consisting of two functional parts, an upstream activator sequence (UAS) that confers inducible transcription by galactose from a consensus yeast transcriptional initiation site. The expression construct is designed such that translation is expected to initiate at the same position as the human wild-type genes for α- and β-globin. Three different types of expression vectors have been used: (1) α-globin and β-globin contained on two separate plasmids (pGS4688 and pGS4988) in a diploid yeast strain; (2) α-globin and β-globin each contained on a single plasmid (pGS289 and pGS389) and expressed in either haploid or diploid strains; and (3) di-alpha-globin and beta globin contained on a single plasmid (pGS 3089)and expressed in haploid strains.

Finally, we describe the co-expression of alpha and beta globin chains. The chains are folded together and combined intracellularly with heme to form active tetrameric hemoglobin. The hemoglobin may be recovered from the cells' soluble fraction. The invention thus obviates the need to express alpha and beta globin separately, solubilize, renature and purify them, and combine them in vitro with heme to obtain an artificial hemoglobin. By way of comparison, the separately expressed beta globin known in the art is deposited in inclusion bodies. Polycistronic co-expression of alpha and beta globins is particularly preferred.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER: 1998:101519 USPATFULL

TITLE: Co-expression of alpha and beta globins

INVENTOR(S): Hoffman, Stephen J., Denver, CO, United States
Looker, Douglas L., Lafayette, CO, United States
Stetler, Gary L., Denver, CO, United States
Wagenbach, Michael, Osaka, Japan

PATENT ASSIGNEE(S): Somatogen, Inc., Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5798227		19980825
APPLICATION INFO.:	US 1995-446105		19950519 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1991-789179, filed on 8 Nov 1991, now patented, Pat. No. US 5545727 which is a continuation-in-part of Ser. No. US 1991-671707, filed on 1 Apr 1991, now abandoned which is a continuation-in-part of Ser. No. US 1989-374161, filed on 30 Jun 1989, now abandoned And a continuation-in-part of Ser. No. US 1989-379116, filed on 13 Jul 1989, now abandoned And a continuation-in-part of Ser. No. US 1989-349623, filed on 10 May 1989, now abandoned

DOCUMENT TYPE: Utility

FILE SEGMENT: Granted
PRIMARY EXAMINER: Carlson, Karen C.
LEGAL REPRESENTATIVE: Cooper, Iver P.
NUMBER OF CLAIMS: 15
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 72 Drawing Figure(s); 70 Drawing Page(s)
LINE COUNT: 6464
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 10 OF 18 USPATFULL on STN
TI Hemoglobins with intersubunit disulfide bonds
AB Cysteine substitution mutants of alpha and/or beta globin mutants are produced by recombinant DNA techniques and used in the construction, intracellularly or otherwise, of mutant hemoglobins in which alpha- and beta-globin like subunits are crosslinked by disulfide bonds. Solutions of these mutant hemoglobins are used as blood substitutes. Preferably, these mutant hemoglobins contain further mutations which reduce their affinity for oxygen. Hemoglobins are preferably obtained by recombinant DNA techniques. Both alpha and beta globin chains can now be readily expressed, making possible the commercial production of wholly artificial hemoglobin, whether conventional or mutant in form. Solutions of wholly artificial hemoglobins are also used as blood substitutes. Expression of the alpha globin gene was substantially improved by means of a beta globin gene "header".

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 1998:79132 USPATFULL
TITLE: Hemoglobins with intersubunit disulfide bonds
INVENTOR(S): Hoffman, Stephen J., Denver, CO, United States
Nagai, Kiyoshi, Cambridge, England
PATENT ASSIGNEE(S): Somatogen, Inc., Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5776890		19980707
APPLICATION INFO.:	US 1995-453666		19950530 (8)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1993-158483, filed on 29 Nov 1993, now patented, Pat. No. US 5449759 which is a continuation of Ser. No. US 1989-443950, filed on 1 Dec 1989, now abandoned which is a continuation-in-part of Ser. No. US 1988-194338, filed on 10 May 1988, now patented, Pat. No. US 5028588, issued on 10 Jul 1991

	NUMBER	DATE
PRIORITY INFORMATION:	GB 1987-11614	19870516

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Carlson, Karen C.
LEGAL REPRESENTATIVE: Cooper, Iver P.
NUMBER OF CLAIMS: 24
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Figure(s); 5 Drawing Page(s)
LINE COUNT: 2001
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 11 OF 18 USPATFULL on STN
TI DNA encoding fused di-beta globins and production of pseudotetrameric hemoglobin
AB The alpha subunits of hemoglobin, which in nature are formed as separate polypeptide chains which bind noncovalently to the beta subunits, are here provided in the form of the novel molecule di-alpha globin, a single polypeptide chain defined by connecting the two alpha subunits

either directly via peptide bond or indirectly by a flexible amino acid or peptide linker. Di-alpha globin may be combined in vivo or in vitro with beta globin and heme to form hemoglobin. Di-alpha globin is expressed by recombinant DNA techniques. Di-beta globin may be similarly obtained.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER:	1998:45071 USPATFULL
TITLE:	DNA encoding fused di-beta globins and production of pseudotetrameric hemoglobin
INVENTOR(S):	Hoffman, Stephen J., Denver, CO, United States Looker, Douglas L., Lafayette, CO, United States Rosendahl, Mary S., Broomfield, CO, United States Stetler, Gary L., Denver, CO, United States Wagenbach, Michael, Osaka, Japan Anderson, David C., Lafayette, CO, United States Mathews, Antony James, Louisville, CO, United States Nagai, Kiyoshi, Cambridge, England
PATENT ASSIGNEE(S):	Somatogen, Inc., Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5744329		19980428
APPLICATION INFO.:	US 1995-444942		19950519 (8)
RELATED APPLN. INFO.:	Division of Ser. No. US 1991-789179, filed on 8 Nov 1991, now patented, Pat. No. US 5545727 which is a continuation-in-part of Ser. No. US 1991-671707, filed on 1 Apr 1991, now abandoned which is a continuation-in-part of Ser. No. US 1989-374161, filed on 30 Jun 1989, now abandoned Ser. No. Ser. No. US 1989-379116, filed on 13 Jul 1989, now abandoned And Ser. No. US 1989-349623, filed on 10 May 1989, now abandoned		

DOCUMENT TYPE:	Utility
FILE SEGMENT:	Granted
PRIMARY EXAMINER:	Carlson, Karen C.
LEGAL REPRESENTATIVE:	Cooper, Iver P.
NUMBER OF CLAIMS:	19
EXEMPLARY CLAIM:	1
NUMBER OF DRAWINGS:	72 Drawing Figure(s); 70 Drawing Page(s)
LINE COUNT:	6645

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 12 OF 18 USPATFULL on STN

TI DNA for the production of multimeric hemoglobins

AB DNA molecules which encode pseudodimeric globin-like polypeptides with an asymmetric cysteine mutation suitable for crosslinking two tetramers, or which encode pseudooligomeric globin-like polypeptides comprising four or more globin-like domains, are useful in the preparation of multimeric hemoglobin-like proteins.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER:	1998:39403 USPATFULL
TITLE:	DNA for the production of multimeric hemoglobins
INVENTOR(S):	Anderson, David C., San Bruno, CA, United States Mathews, Antony James, Louisville, CO, United States Stetler, Gary L., Boulder, CO, United States
PATENT ASSIGNEE(S):	Somatogen, Inc., Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5739011		19980414

APPLICATION INFO.: US 1995-443890 19950531 (8)
RELATED APPLN. INFO.: Continuation of Ser. No. US 1994-240712, filed on 9 May 1994, now patented, Pat. No. US 5599907 which is a continuation-in-part of Ser. No. US 1991-789179, filed on 8 Nov 1991, now patented, Pat. No. US 5545727 which is a continuation-in-part of Ser. No. US 1991-671707, filed on 1 Apr 1991, now abandoned which is a continuation-in-part of Ser. No. US 1989-374161, filed on 30 Jun 1989, now abandoned Ser. No. Ser. No. US 1989-379116, filed on 13 Jul 1989, now abandoned And Ser. No. US 1989-349623, filed on 10 May 1989, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Degen, Nancy
LEGAL REPRESENTATIVE: Cooper, Iver P.
NUMBER OF CLAIMS: 37
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 14 Drawing Figure(s); 12 Drawing Page(s)
LINE COUNT: 4043
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 13 OF 18 USPATFULL on STN
TI Blood substitutes
AB The present invention provides blood substitutes comprised of recombinantly produced mutant hemoglobin having an osmolarity greater than 303 milliosmoles per liter and less than 800 milliosmoles per liter. Such hyperosmolar blood substitute additionally comprises a physiologically acceptable molecule less diffusible than dextrose.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 97:76106 USPATFULL
TITLE: Blood substitutes
INVENTOR(S): Hoffman, Stephen J., Denver, CO, United States
Nagai, Kiyoshi, Cambridge, England
PATENT ASSIGNEE(S): Somatogen, Inc., Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5661124		19970826
APPLICATION INFO.:	US 1995-396866		19950301 (8)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1993-62780, filed on 17 May 1993, now abandoned which is a continuation of Ser. No. US 1989-443950, filed on 1 Dec 1989, now abandoned which is a continuation-in-part of Ser. No. US 1988-194338, filed on 16 May 1988, now patented, Pat. No. US 5028588

	NUMBER	DATE
PRIORITY INFORMATION:	GB 1987-11614	19870516

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Jagannathan, Vasu S.
ASSISTANT EXAMINER: Saoud, Christine
LEGAL REPRESENTATIVE: Nowak, Henry P., Brown, Theresa A.
NUMBER OF CLAIMS: 10
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Figure(s); 6 Drawing Page(s)
LINE COUNT: 2226
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 14 OF 18 USPATFULL on STN

TI Production and use of multimeric hemoglobins
AB Multimeric hemoglobin-like proteins are obtained by crosslinking cysteines of the component tetramers, or by genetically fusing globin-like domains of one tetramer with those of another, by means of an interdomain spacer sequence. Artificial cysteines are introduced selectively in a single globin-like domain per tetramer to control polymerization.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER:	97:10125 USPATFULL		
TITLE:	Production and use of multimeric hemoglobins		
INVENTOR(S):	Anderson, David C., San Bruno, CA, United States Mathews, Antony J., Louisville, CO, United States Stetler, Gary L., Boulder, CO, United States		
PATENT ASSIGNEE(S):	Somatogen, Inc., Boulder, CO, United States (U.S. corporation)		
	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5599907		19970204
	WO 9309143		19930513
APPLICATION INFO.:	US 1994-240712		19940509 (8)
	WO 1992-US9752		19921106
			19940509 PCT 371 date
			19940509 PCT 102(e) date
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1991-789179, filed on 8 Nov 1991 which is a continuation-in-part of Ser. No. US 1991-671707, filed on 1 Apr 1991, now abandoned which is a continuation-in-part of Ser. No. US 1989-374161, filed on 30 Jun 1989, now abandoned Ser. No. Ser. No. US 1989-379116, filed on 13 Jul 1989, now abandoned And Ser. No. US 1989-349623, filed on 10 May 1989, now abandoned		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Fleisher, Mindy		
ASSISTANT EXAMINER:	Degen, Nancy J.		
LEGAL REPRESENTATIVE:	Cooper, Iver P.		
NUMBER OF CLAIMS:	74		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	14 Drawing Figure(s); 12 Drawing Page(s)		
LINE COUNT:	4172		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 15 OF 18 USPATFULL on STN
TI Polynucleotides encoding genetically engineered mutant hemoglobins
AB The present invention provides for polynucleotides capable of producing recombinant hemoglobins that have a P.sub.50 of 26-36 torr. This invention makes possible the commercial production of wholly artificial hemoglobin, whether conventional or mutant in form, which can be used as blood substitutes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER:	96:92171 USPATFULL
TITLE:	Polynucleotides encoding genetically engineered mutant hemoglobins
INVENTOR(S):	Hoffman, Stephen J., Cherry Hills Village, CO, United States Nagai, Kiyoshi, Cambridge, England
PATENT ASSIGNEE(S):	Medical Research Council, London, England (non-U.S. corporation) Somatogen, Inc., Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5563254		19961008
APPLICATION INFO.:	US 1993-170095		19931220 (8)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1993-62780, filed on 17 May 1993, now abandoned which is a continuation of Ser. No. US 1989-443950, filed on 1 Dec 1989, now abandoned which is a continuation-in-part of Ser. No. US 1988-194338, filed on 16 May 1988, now patented, Pat. No. US 5028588

	NUMBER	DATE
PRIORITY INFORMATION:	GB 1987-11614	19870516

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Wax, Robert A.
ASSISTANT EXAMINER: Carlson, K. Cochrane
LEGAL REPRESENTATIVE: Cooper, Iver P., Nowak, Henry P., Brown, Theresa A.
NUMBER OF CLAIMS: 6
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Figure(s); 6 Drawing Page(s)
LINE COUNT: 2170
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 16 OF 18 USPATFULL on STN

TI DNA encoding fused di-alpha globins and production of pseudotetrameric hemoglobin

AB The alpha subunits of hemoglobin, which in nature are formed as separate polypeptide chains which bind noncovalently to the beta subunits, are here provided in the form of the novel molecule di-alpha globin, a single polypeptide chain defined by connecting the two alpha subunits either directly via peptide bond or indirectly by a flexible amino acid or peptide linker. Di-alpha globin may be combined in vivo or in vitro with beta globin and heme to form hemoglobin. Di-alpha globin is expressed by recombinant DNA techniques. Di-beta globin may be similarly obtained.

DNA encoding alpha globin fusion proteins is provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 96:72972 USPATFULL
TITLE: DNA encoding fused di-alpha globins and production of pseudotetrameric hemoglobin
INVENTOR(S): Hoffman, Stephen J., Denver, United States
Looker, Douglas L., Lafayette, CO, United States
Nagai, Kiyoshi, Cambridge, England
PATENT ASSIGNEE(S): Somatogen, Inc., Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5545727		19960813
APPLICATION INFO.:	US 1991-789179		19911108 (7)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1991-671707, filed on 1 Apr 1991, now abandoned which is a continuation-in-part of Ser. No. US 1989-374161, filed on 30 Jun 1989, now abandoned And a continuation-in-part of Ser. No. US 1989-379116, filed on 13 Jul 1989, now abandoned And a continuation-in-part of Ser. No. US 1989-349623, filed on 10 May 1989, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted

PRIMARY EXAMINER: Walsh, Stephen G.
LEGAL REPRESENTATIVE: Cooper, Iver P.
NUMBER OF CLAIMS: 40
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 36 Drawing Figure(s); 70 Drawing Page(s)
LINE COUNT: 7153
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 17 OF 18 USPATFULL on STN
TI Hemoglobins with intersubunit desulfide bonds
AB Cysteine substitution mutants of alpha and/or beta globin mutants are produced by recombinant DNA techniques and used in the construction, intracellularly or otherwise, of mutant hemoglobins in which alpha- and beta-globin like subunits are crosslinked by disulfide bonds. Solutions of these mutant hemoglobins are used as blood substitutes.

Preferably, these mutant hemoglobins contain further mutations which reduce their affinity for oxygen.

Hemoglobins are preferably obtained by recombinant DNA techniques. Both alpha and beta globin chains can now be readily expressed, making possible the commercial production of wholly artificial hemoglobin, whether conventional or mutant in form. Solutions of wholly artificial hemoglobins are also used as blood substitutes. Expression of the alpha globin gene was substantially improved by means of a beta globin gene "header".

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
ACCESSION NUMBER: 95:82353 USPATFULL
TITLE: Hemoglobins with intersubunit desulfide bonds
INVENTOR(S): Hoffman, Stephen J., Denver, CO, United States
Nagai, Kiyoshi, Cambridge, England
PATENT ASSIGNEE(S): Somatogen, Inc., Boulder, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5449759		19950912	
APPLICATION INFO.:	US 1993-158483		19931129	(8)

DISCLAIMER DATE: 20080702
RELATED APPLN. INFO.: Continuation of Ser. No. US 1989-443950, filed on 1 Dec 1989, now abandoned which is a continuation-in-part of Ser. No. US 1988-194338, filed on 10 May 1988, now patented, Pat. No. US 5028588, issued on 2 Jul 1991

	NUMBER	DATE
PRIORITY INFORMATION:	GB 1987-11614	19870516

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Walsh, Stephen G.
LEGAL REPRESENTATIVE: Cooper, Iver P.
NUMBER OF CLAIMS: 17
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 7 Drawing Figure(s); 5 Drawing Page(s)
LINE COUNT: 1983
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 18 OF 18 USPATFULL on STN
TI Blood substitutes
AB Solutions of mutant hemoglobins having a lower oxygen affinity than that of native hemoglobin are used as blood substitutes. The mutant hemoglobins are preferably obtained by recombinant DNA techniques. Both alpha and beta globin chains can now be so prepared, making possible the

production of wholly artificial hemoglobin, whether conventional or mutant in form. Solutions of wholly artificial hemoglobins are also used as blood substitutes.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

ACCESSION NUMBER:	91:52527 USPATFULL
TITLE:	Blood substitutes
INVENTOR(S):	Hoffman, Stephen L., Denver, CO, United States Nagai, Kiyoshi, Cambridge, England
PATENT ASSIGNEE(S):	Somatogenetics International, Inc., Broomfield, CO, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5028588		19910702	
APPLICATION INFO.:	US 1988-194338		19880516	(7)

	NUMBER	DATE
PRIORITY INFORMATION:	GB 1987-11614	19870516

DOCUMENT TYPE:	Utility
FILE SEGMENT:	Granted
PRIMARY EXAMINER:	Stone, Jacqueline
LEGAL REPRESENTATIVE:	Cooper, Iver P.
NUMBER OF CLAIMS:	28
EXEMPLARY CLAIM:	1
NUMBER OF DRAWINGS:	7 Drawing Figure(s); 5 Drawing Page(s)
LINE COUNT:	1557

CAS INDEXING IS AVAILABLE FOR THIS PATENT.